

ALASKA PENINSULA-ALEUTIAN ISLANDS MANAGEMENT AREA  
FOOD AND BAIT HERRING MANAGEMENT PLAN, 2004



By

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## ABSTRACT

The Pacific herring *clupea pallasii* food and bait fishery in the Alaska Peninsula-Aleutian Islands Herring Management Area can take place within the Unimak, Akutan, Unalaska, Umnak, and Adak Districts. This document describes how the fishery will be managed, the requirements of industry to participate in the fishery, and how to contact and relay information to the department. Historical harvests for the Dutch Harbor fishery as well as the 2004 season guideline harvest levels and harvest projections are presented. Guidelines for a new exploratory herring fishery around Adak Island are presented. This document is intended as a guide for commercial herring harvesters, buyers, and tenders. Information regarding commercial herring fishing periods should be obtained from the department prior to fishing.

## INTRODUCTION

This document is intended to provide commercial herring harvesters and buyers with management information and guidelines for participating in the Alaska Peninsula-Aleutian Islands Management Area Pacific herring *clupea pallasii* food and bait fishery.

The Alaska Peninsula-Aleutian Islands Herring Management Area consists of Bering Sea state waters extending west of Cape Menshikof and Pacific Ocean state waters extending west of Kupreanof Point to the International Dateline (Figure 1). In 1991, the Alaska Board of Fisheries (BOF) enacted regulations that allow food and bait herring fishing only in the eastern Aleutian Islands portion of the Alaska Peninsula-Aleutian Islands Management Area. Consequently, the Dutch Harbor food and bait herring fishery may take place only in eastern Aleutian Islands waters within the Unimak, Akutan, Unalaska, Umnak, and Adak Districts (Figure 2). In February of 2004, the BOF assigned a 500 ton quota to an exploratory herring gillnet fishery in state waters around Adak Island between 175°30' W longitude and 177°W longitude.

The Alaska Department of Fish and Game (ADF&G) uses global positioning system (GPS) technology to identify district and section boundaries, closed waters, and regulatory fishing coordinates.

In 2001, the BOF established a herring gillnet fishery to allow gillnet fishers a practical opportunity to harvest herring from the Dutch Harbor allocation given the short (usually less than one hour) open periods required to manage the purse seine fishery. In 2004, the BOF increased the gillnet quota from 7% to 14% of the total Dutch Harbor herring food and bait allocation (5 AAC 27.655; ADF&G 2003).

The Dutch Harbor herring food and bait fishery began in 1929 (Rounsefell 1930) and occurred annually through 1938. Harvests averaged 1,474 tons and ranged from 513 tons to 2,510 tons (Table 1). No fishing occurred from 1939 through 1944 or from 1946 through 1980. From 1981 to 2003, catches ranged from 704 tons to 3,578 tons. From 1982 to 1991, an average of 8 vessels participated in the Dutch Harbor food and bait herring fishery. Between 1992 and 2000 effort increased to an average of 18 purse seine vessels. In 2001 to 2003, effort in the purse seine fishery decreased to an average of 14 permits (Table 2). In 2003, 14 permit holders harvested 1,379 short tons of herring in 4 fishing periods using 6 vessels in a cooperative fishery. Thirteen gillnet vessels harvested 108 of the 116 ton quota during the last of 5 fishing periods between June 24 and July 7 (Duesterloh and Burkey, 2003; Table 2 and 3). In recent years, all harvests have been in Unalaska Bay in the Unalaska District (Figures 3 and 4).

The ADF&G will manage this fishery according to the Bering Sea Herring Fishery Management Plan (5 AAC 27.060; ADF&G 2003). The following ADF&G local offices can be contacted for information concerning the Dutch Harbor herring food and bait fishery:

**Sand Point:**

Alaska Department of Fish and Game  
P.O. Box 129  
Sand Point, AK 99661

Phone: (907) 383-2066  
Fax: (907) 383-2606  
Record: (907) 383-2334

VHF 6 & 73  
Single Side Band 3.230 MHz  
KWB 362

**Dutch Harbor**

Alaska Department of Fish and Game  
P.O. Box 920587  
Dutch Harbor, AK 99692

Phone: (907)581-1239  
Fax: (907)581-1572

VHF 9  
Single Side Band 4.125 MHz  
WIM 76

**DUTCH HARBOR FOOD AND BAIT FISHERY*****Requirements and Harvest Projection for the 2004 Fishery***

The department shall attempt to manage the Dutch Harbor food and bait herring fishery so that the harvest remains within the allocated 7% of the remaining allowable Togiak District herring sac roe harvest as determined under the provisions of the Bristol Bay Herring Management Plan (5 AAC 27.865). In order for the Dutch Harbor herring food and bait fishery to occur, each respective Western Alaska herring stock must surpass its respective BOF mandated spawning biomass threshold. Currently, the biomass of all stocks is forecasted to be above their respective threshold levels. Therefore, the outlook for a 2004 Dutch Harbor food and bait fishery is favorable. However, processors and fishers are advised that management of the 2004 fishery will be based on the observed spawning biomass of each Bering Sea herring stock in 2004. The ADF&G will update biomass estimates for each stock as herring move into coastal waters during spawning migrations. The projected harvest allocation for the 2004 Dutch Harbor herring food and bait fishery is 1,899 short tons (Appendix B; West 2003). This allocation was derived using the Bering Sea Herring Management Plan (5 AAC 27.060) and the preseason projected 2004 Togiak herring spawning biomass of 143,124 tons. The actual allocation will be established when the 2004 Togiak District herring spawning biomass is determined.

The Dutch Harbor food and bait allocation established under 5 AAC 27.865(b)(7) in 2001 and amended in 2004, shall be divided between gear groups, 86% to the seine fishery and 14% to the gillnet fishery. These allocations are considered independent of each other so that one gear group may not harvest herring allocated to the other gear group. For the 2004 season, this results in projected harvest allocations of 266 tons for the gillnet fishery and 1,633 tons for the purse seine and seine pound fishery (Appendix B).

A “rollover” provision was adopted during the 2001 BOF meeting (5AAC 27.655), as an incentive to encourage the department to conduct a fishery that stays within the herring harvest allocation. During years when herring harvest surpasses the allocation, the amount of additional

harvest shall be deducted from the next year's allocation by gear group. If necessary, any "rollover" herring harvest from the 2004 season will be deducted from the allocation for the 2005 season.

### ***Registration Requirements for Fishing Vessels, Tenders, and Processors***

Each fishing vessel, tender operator, and buyer must register at the ADF&G office in Dutch Harbor or at a purse seine pre-fishery meeting in Dutch Harbor prior to catching, tendering, buying, or processing herring. The purse seine pre-fishery meeting is tentatively scheduled for July 14 at 5:00 PM. The actual time and location will be announced and distributed to harvesters and processors in late June or early July. The buyer and tender reporting requirements are located in Appendix A. Permit holders are encouraged to check with their markets prior to fishing to determine which products are acceptable.

### ***Gillnet and Seine Specifications***

Gillnet mesh sizes up to three and one-half inches with no depth restrictions may be used in the Alaska Peninsula-Aleutian Islands Management Area. The aggregate length of gillnets operated by a CFEC permit holder may not exceed 150 fathoms (5AAC 27.6310). Purse seines are restricted to a maximum of 250 fathoms in length with no depth restrictions (5 AAC 27.632).

### ***Fishing Periods for Gillnet Vessels***

The herring gillnet fishery can open by emergency order beginning NOON June 24 and can extend through NOON July 15, when the purse seine fishery may open. The department may establish open periods by emergency order based on industry interest in conducting the fishery. The fishery will begin no later than July 1, or in June if herring are observed in the area. In order to prevent harvests from exceeding available processing capacity and the guideline harvest level (GHL), the department will limit fishing periods to 6 hours in length. In addition, effort levels and harvest rates will be considered when establishing time and area restrictions for gillnet harvesters. The fishery will be conducted in the waters of Unalaska Bay.

### ***Gillnet Catch Reporting***

Gillnet permit holders wishing to harvest herring must register with ADF&G personnel in Dutch Harbor prior to fishing. Even if no herring are harvested or vessels are not actively fishing, permit holders and processors will be required to report herring harvest daily or until registration from the fishery is withdrawn. Permit holders and processors will be required to contact the ADF&G in Dutch Harbor upon harvest or delivery of herring. If conditions arise which require additional time for permit holders to report herring harvests the department should be informed of the situation prior to fishing operations. Catch reporting instructions will be explained in detail during vessel and processor registration.

### ***Fishing Periods for Purse Seine Vessels***

The initial purse seine herring fishing period may occur as early as NOON on July 15 provided that the department is able to survey the area and sufficient herring biomass is available. **The department anticipates that purse seine fishing periods will be very short in duration and intends to conduct the fishery within portions of Unalaska Bay.** There is no guarantee that the entire allocation will be harvested. Short openings over several days may be required to prevent overharvest. A catch report from each Commercial Fisheries Entry Commission (CFEC) permit holder or tender operator that reflects each vessel's harvest will be required after each fishing period, whether or not herring are harvested, before the next fishing period will be announced. Generally, there will be a 12-hour closure between fishing periods to allow permit holders the opportunity to deliver their catch and the ADF&G time to assess the harvest and processing capacity. A shorter closed period may be allowed if the department promptly receives harvest reports from all vessels participating. The department may cancel or extend a fishing period with as little as 5 minutes notice.

If the total GHL is less than 150 tons per vessel the department may consider not opening the fishery. The department does not have the authority to require fishermen to form a cooperative harvesting agreement; however, if the industry decides to do so the department will be open to management options that will minimize the risk of overharvesting the resource.

The department will try to assess herring biomass in the area prior to opening the fishery. Harvesters and spotter pilots are encouraged to relay biomass information to ADF&G personnel prior to the opening. Past cooperation has proven valuable in evaluating stock status and gaining management information.

### ***Purse Seine Catch Reporting***

Permit holders, tender operators, and processors must provide accurate catch information after each fishing period. Tender operators must provide accurate estimates of herring onboard the tender. Processors must provide accurate estimates of delivered herring.

Inseason emergency orders will be broadcasted on VHF channel 12. VHF channel 12 will be the designated department channel for conducting herring fishing communications during the fishery. Fishers, tenders and processors should monitor this channel.

### ***Gear Testing***

Prior to the opening of the fishery, herring purse seine gear may be tested during daylight hours until 10:00 PM July 14. Gear testing will only be allowed between Hog Island and Amaknak Island in view of the ADF&G Dutch Harbor office or within one-half mile of the Delta-Western Fuel Dock in Dutch Harbor. Permit holders must contact an ADF&G representative in Dutch Harbor on VHF channel 12 or in person prior to setting gear and must designate a specific set location and time. In addition, any fish caught during gear testing must immediately be released unharmed. After

the fishery has been closed and all herring on the vessel have been offloaded, participants may set their net to straighten, clean, and organize their gear in the designated area, after notifying the department.

### ***Herring Pound Fishery***

In 2004, the BOF established a herring seine pound fishery as part of the Dutch Harbor Food and Bait fishery. One hundred tons of herring were allocated to this fishery. This allocation is deducted from the purse seine allocation. A person planning to operate a pound is required to provide to the ADF&G detailed plans describing the design and operation of the pound, including exact location and timing of pound operation. These plans must be received by the department in a timely manner to allow preparation of a commissioner's permit for pound operation. A permit holder intending to operate a pound must register with the ADF&G in Dutch Harbor or Sand Point no later than 4:30 PM, June 30.

Herring for pounding may be harvested during purse seine fishery openers. If the entire herring pound allocation is not utilized, the remaining allocation will **not** be reallocated to the purse seine fishery. The department may, by emergency order, establish separate fishing periods for the pound fishery. If the allocation in this fishery is exceeded, the permit holders will be required to release excess herring unharmed. However, if the pound allocation has not been harvested and the purse seine fishery exceeds its GHL, the department will subtract the overage from the pound fishery allocation. If two or more permit holders register, the pound allocation is divided equally between them.

### ***Fish Tickets***

Permit holders must provide specific harvest locations (statistical area and specific landmark) to buyers, so that they can be recorded on fish tickets. Fish tickets must be delivered, by mail or in person, to the Sand Point ADF&G office within 10 days after the closure of the fishery or delivered in person immediately following the fishery to the Dutch Harbor ADF&G office. If ten days is insufficient time to submit fish tickets, other arrangements may be made by contacting the ADF&G in Sand Point.

### ***Commercial Harvest Sampling***

Cooperation by harvesters, tender operators, and processors will be appreciated when ADF&G personnel request herring samples from the commercial catch. These samples will be used to monitor age, sex and size composition of the stock.

### ***Test Fishing***

The department will attempt to conduct a test fishery in 2004. The test fishery will provide the department with valuable stock assessment information. In addition, the test fish program will provide age, weight, and length samples of herring present in the Dutch Harbor area, and help pay the associated costs of analyzing data and managing the fishery. The department will advertise for test fish vessels in June and early July.

### **ADAK EXPLORATORY FISHERY**

Beginning in 2004, the BOF has authorized an exploratory fishery for herring around Adak Island using gillnet gear with an allocation of 500 tons. The department has no information about the size, timing, or condition of herring stocks in the Adak area. The exploratory fishery is intended to provide ADF&G with stock condition and age structure data and allow development of a localized fishery. Under this provision, both a food and bait fishery and/or a sac roe fishery are possible. The department may station a representative in Adak to manage the exploratory fishery and collect and process herring samples. A request for bids to conduct a herring test fishery may be put forth by ADF&G. The general Alaska Peninsula-Aleutian Islands herring fishery regulations apply to the Adak exploratory fishery.

### ***Registration Requirements for Fishing Vessels, Tenders, and Processors***

Each fishing vessel, tender operator, and buyer must register and obtain a commissioners permit for the Adak herring fishery at the ADF&G office in Sand Point or Dutch Harbor prior to catching, tendering, buying, or processing herring. The buyer and tender reporting requirements are located in Appendix A. Permit holders are encouraged to check with their markets prior to fishing to determine which products are acceptable. All crewmembers must have a valid crew member license or a CFEC permit card for any fishery.

### ***Fish Tickets and Catch Reporting***

Permit holders must provide specific harvest locations (statistical area and specific landmark) to buyers, so that they can be recorded on fish tickets. Fish tickets must be received, by mail or fax, at the Sand Point ADF&G office within 10 days after the closure of the fishery. If 10 days is insufficient time to submit fish tickets, other arrangements may be made by contacting the ADF&G in Sand Point. Even if no herring are harvested or vessels are not actively fishing, permit holders and processors will be required to report herring harvest daily or until registration from the fishery is withdrawn. If conditions arise which require additional time for permit holders to report herring harvests the department should be informed of the situation prior to fishing operations.

### ***Commercial Harvest Sampling***

Cooperation by harvesters, tender operators, and processors will be appreciated when ADF&G personnel request herring samples from the commercial catch. These samples will be used to monitor age composition and collect information about the herring stocks.

### ***Fishing Seasons, Area, Gear and Operation***

The exploratory herring fishery in the Adak area is operated under the regulations of the Alaska Board of Fisheries for Statewide Commercial Herring Fishing in Alaska. Specifically, the following regulations apply:

1. Herring may be taken in state waters (within 3 miles of shore) of the Adak district between 175° 30' W longitude and 177° W longitude (Figure 5).
2. Herring may be taken only during fishing periods established by emergency order
  - (1) in the sac roe fishery, from April 15 through NOON , July 24;
  - (2) in the food and bait fishery, from NOON June 24 through February 28.
3. The aggregate length of gillnets operated by a CFEC permit holder may not exceed 150 fathoms.
5. Permit holder must be physically present while the gillnet is being fished.
6. Each drift gillnet in operation must have a buoy at one end and the opposite end must be attached to the fishing vessel. Each set gillnet in operation must be anchored and buoyed at both ends. Each buoy must be plainly and legibly marked with the permanent vessel license plate number (ADF&G number) of the vessel operating the gear. The buoy may bear only a single number and this number must be that of the vessel used in operating the gear. The numbers must be painted on the top one-third of the buoy in numerals at least four inches in height, one-half inch in width and in a color contrasting to that of the buoy. The buoy markings must be visible on the buoy above the water surface.
7. Notwithstanding 5 AAC 27.050(c), gillnet mesh sizes up to three and one-half inches may be used.

## LITERATURE CITED

- ADF&G (Alaska Department of Fish and Game). 2003. 2003-2004 Commercial herring fishing regulations, 2003 edition. Alaska Department of Fish and Game, Division of Commercial Fisheries, Juneau.
- Duesterloh, S. and C. Burkey. 2003. Alaska Peninsula - Aleutian Islands Management Area Herring Sac Roe and Food and Bait Fisheries Annual Management Report, 2003. Alaska Department of Fish and Game, Division of Commercial Fisheries, Regional Informational Report 4K03-63, Kodiak.
- Rounsefell, G.A. 1930. Contribution to the biology of the Pacific herring, *Clupea pallasii*, and the condition of the fishery in Alaska. Bull. U.S. Bur. Fish. 45. 227-320.
- West, F. 2003. Commercial herring fishing Memorandum, December 5, 2003. Alaska Department of Fish and Game, Commercial Fisheries Division, Anchorage.

Table 1. Alaska Peninsula-Aleutian Islands Area Dutch Harbor herring food and bait fisheries historical summary for the purse seine fishery, 1929-2003.

Year	Harvest in Short Tons	Number of Processors	Number of Vessels Making Landings	Number Landings	Tons Per Boat	Tons Per Landing	Price Per Ton	Exvessel Value (Thousands)	Exvessel Value Per Vessel (Thousands)
1929	1,259						Information not Available		
1930	1,916						Information not Available		
1931	1,056	12	26				Information not Available		
1932	2,510	12	30				Information not Available		
1933	1,585	12	38				Information not Available		
1934	1,533	9					Information not Available		
1935	2,412	10					Information not Available		
1936	1,379	8					Information not Available		
1937	579						Information not Available		
1938	513						Information not Available		
1939-44	No Fishery								
1945	75						Information not Available		
1946-80	No Fishery								
1981 <sup>a</sup>	704	<sup>b</sup>	<sup>b</sup>	16	352	44	300	211	<sup>a</sup>
1982	3,565	6	7	95	509	38	300	1,020	146
1983	3,567	5	8	96	446	37	232	828	104
1984	3,578	5	9	61	398	59	210	751	83
1985	3,480	<sup>a</sup>	6	78	560	45	162	564	94
1986	2,394	4	7	53	342	45	254	600	86
1987	2,503	4	8	45	373	56	300	751	94
1988	2,004	6	8	59	251	34	252	505	63
1989	3,081	5	9	69	342	45	283	873	97
1990	820	5	7	8	117	103	350	287	41
1991	1,325	5	8	18	166	74	300	398	50
1992	1,949	5	11	26	177	75	300	573	52
1993	2,790	4	13	32	215	87	300	837	64
1994	3,349	7	14	65	239	52	300	1,005	72
1995	1,748	6	14	24	125	73	300	524	37
1996	2,239	6	24	29	93	77	300	672	28
1997	1,950	5	26	63	75	31	300	585	23
1998	1,994	3	22	22	91	91	300	598	27
1999	2,398	3	21	71	109	34	400-600	1,038	49
2000	2,014	3	20	28	88	72	300-500	671	34
2001	1,332	3	14	16	95	83	300-500	406	29
2002	2,617	4	12	14	218	187	300-450	909	76
2003	1,379	3	6 <sup>b</sup>	16	230	86	50-400	342	57
Averages									
1929-1938	1,474						Information not Available		
1993-2002	2,243	4	18	36	135	79	348	724	44

<sup>a</sup> This information cannot be released due to state confidentiality requirements.

<sup>b</sup> Fishery was conducted by a cooperative fishery of 14 permit holders using 6 vessels.

Table 2. Aleutian Islands area Dutch Harbor herring food and bait fisheries historical summary for the gillnet fishery, 2001-2003.

Year	Harvest in Short Tons	Number of Vessels Making Landings	Number Landings	Tons Per Boat	Tons Per Landing	Price Per Ton	Exvessel Value (Thousands)	Exvessel Value Per Vessel (Thousands)
2001	107	6	25	18	4	300-500	54	9
2002	134	13	37	10	4	400	54	4
2003	108 a	13	23	8	5	400	35 a	3
Average	116	11	28	12	4	400	47	5

<sup>a</sup> Twenty tons were not purchased because of spoilage.

Table 3. Alaska Peninsula-Aleutian Islands Area Dutch Harbor commercial herring food and bait fishery, including fishing dates, days fished, preseason Togiak spawning biomass, guideline harvest level, harvest, and number of vessels fishing, 1981-2003.

Year	Fishing Dates		No. of Calendar Days with Fishing Periods	Preseason Togiak Spawning Biomass Short Tons	GHL Short Tons	Food & Bait Harvest Short Tons	Percent Togiak Spawning Biomass Harvested	Number Vessels Fishing
	First	Last						
1981	Aug 3	Aug 23	21	159,000	None	704	0.4	<sup>a</sup>
1982	Aug 5	Sep 12	39	98,000	None	3,565	3.6	7
1983	Jul 23	Sep 6	46	142,000	3,525 <sup>b</sup>	3,567	2.5	8
1984	Jul 17	Jul 27	11	115,000	3,525 <sup>b</sup>	3,578	3.1	9
1985	Jul 17	Aug 11	26	132,000	3,525 <sup>b</sup>	3,480	2.6	6
1986	Jul 16	Jul 28	13	96,000	2,453	2,394	2.5	7
1987	Jul 16	Jul 23	4	88,000	2,332 <sup>c</sup>	2,503	2.8	9 <sup>c</sup>
1988	Jul 16	Sep 18	21	132,000	3,100 <sup>c</sup>	2,004	1.5	8 <sup>c</sup>
1989	Jul 16	Aug 5	19	100,108	3,100 <sup>c</sup>	3,081	3.1	9 <sup>c</sup>
1990	Aug 15	Aug 15	<1	72,000	903	820	1.1	7
1991	Jul 17	Jul 17	<1	83,229	931	1,325	1.6	8
1992	Jul 16	Jul 28	5	60,214	1,940	1,949	3.2	11
1993	Jul 16	Jul 16	<1	164,135	2,193	2,790	1.7	13
1994	Jul 16	Jul 19	4	165,747	2,215	3,349	2.0	16
1995	Jul 16	Jul 16	<1	149,093	1,982	1,748	1.2	18
1996	Jul 16	Jul 16	<1	135,585	1,793	2,239	1.7	25
1997	Jul 15	Jul 19	5	125,000	1,645	1,950	1.6	26
1998	Jul 16	Jul 16	<1	121,054	1,590	1,994	1.6	22
1999	Jul 16	Jul 20	4	156,200	2,082	2,398	1.5	22
2000	Jul 15	Jul 15	<1	130,904	1,728	2,014	1.5	23
2001								
Gillnet	Jun 25	Jul 11	9	119,818	110	107	0.1	6
Seine	Jul 15	Jul 16	2	119,818	1,462	1,332	1.1	14
2001 Total	Jun 25	Jul 16	11	119,818	1,572	1,439	1.2	20
2002								
Gillnet	Jul 5	Jul 17	12	120,196	110	134	0.1	13
Seine	Jul 15	Jul 15	<1	120,196	1,468	2,617	2.2	16
2002 Total	Jul 5	Jul 17	12	120,196	1,578	2,751	2.3	29
2003								
Gillnet	Jun 24	July 7	10	126,213	116	108	0.1	13
Seine	Jul 16	Jul 19	4	126,213	1,546	1,379	1.1	14
2003 Total	Jun 24	Jul 19	7	126,213	1,662	1,546	1.2	27
1994-2003 Average								
			7	134,981	1,785	2,143	1.6	23

<sup>a</sup> Number may not be released due to state confidentiality requirements.

<sup>b</sup> Harvest ceiling of 3,525 established by Alaska Board of Fisheries.

<sup>c</sup> Purse seine gear only used to harvest herring from 1981-2000 except that deliveries were made by one gillnet vessel in 1987 and 1988 and two gillnet vessels in 1989.

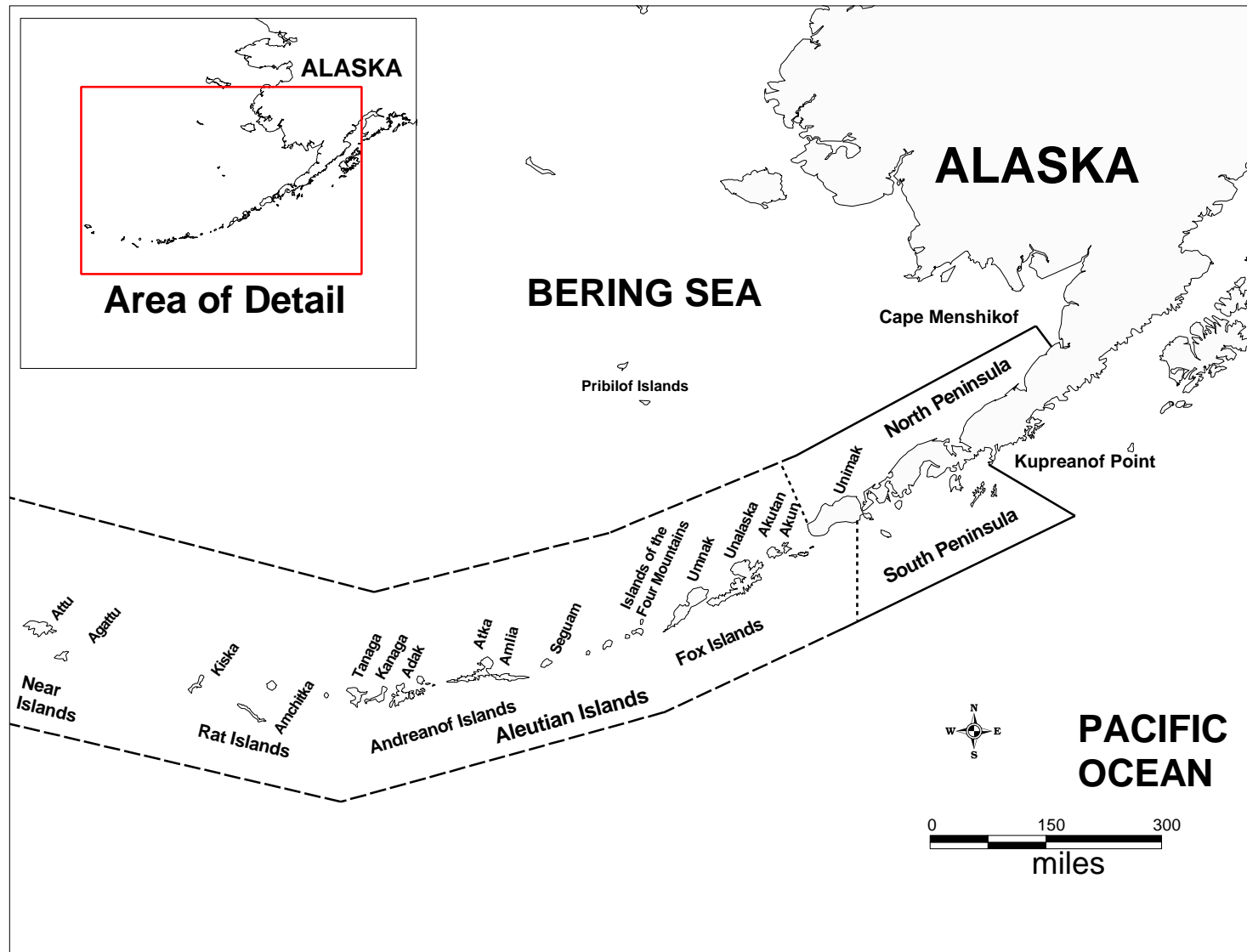


Figure 1. Map of the Alaska Peninsula and Aleutian Islands Herring Management Area.

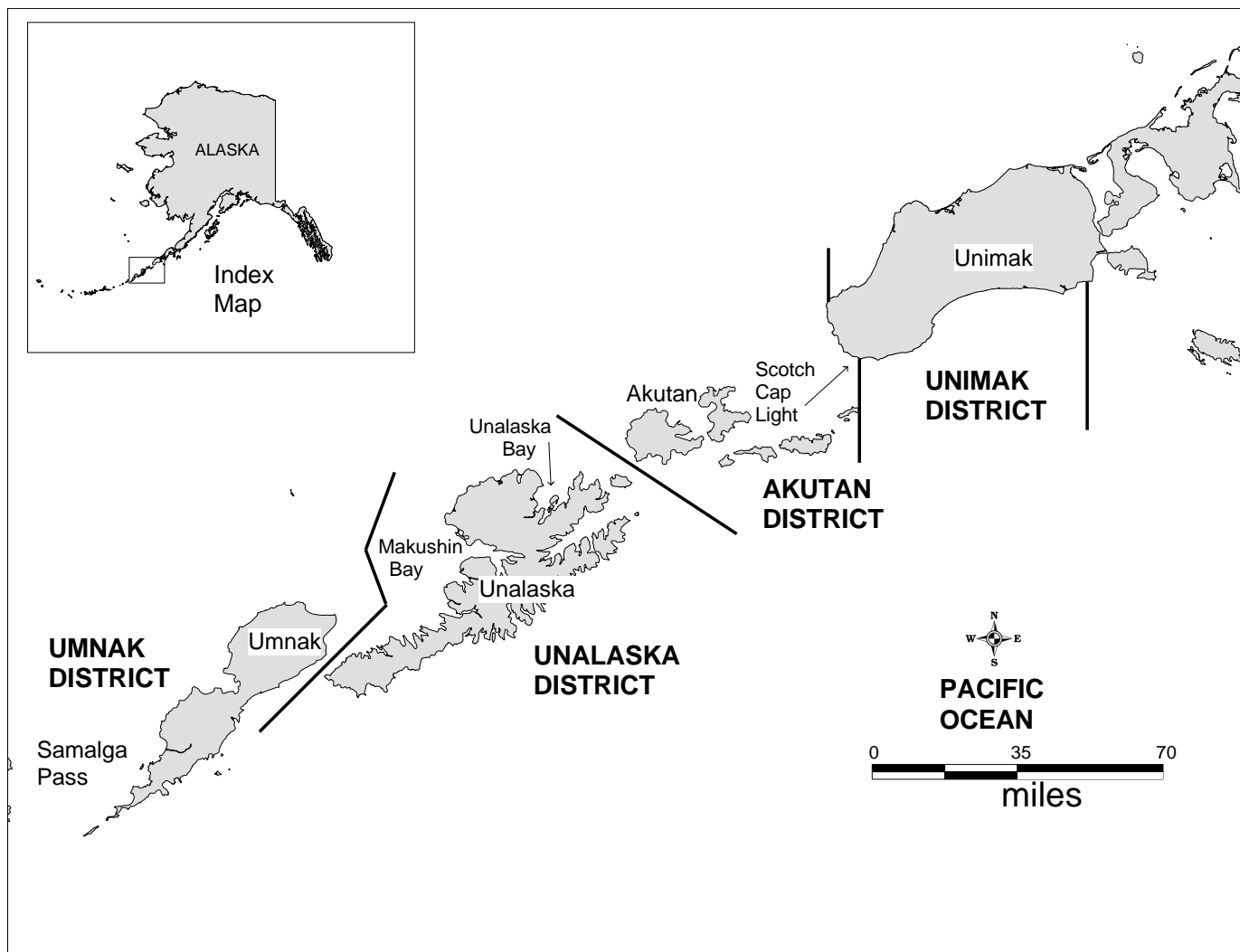


Figure 2. Map of the eastern Aleutian Islands from Samalga Pass to Unimak Island with herring fishing districts shown.

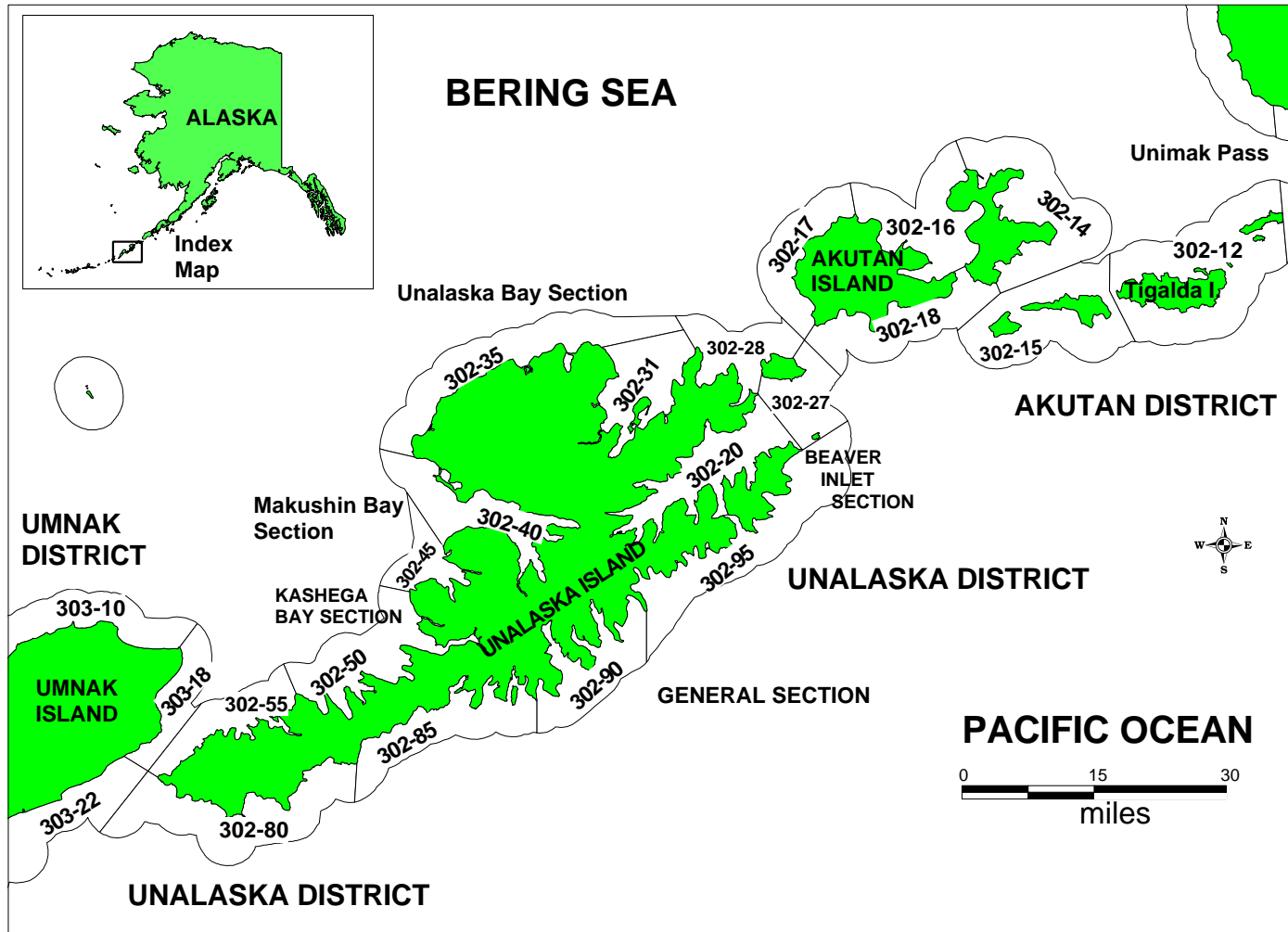


Figure 3. Map of the Aleutian Islands from Tigalda Island to Umnak Island with the statistical herring fishing are shown.

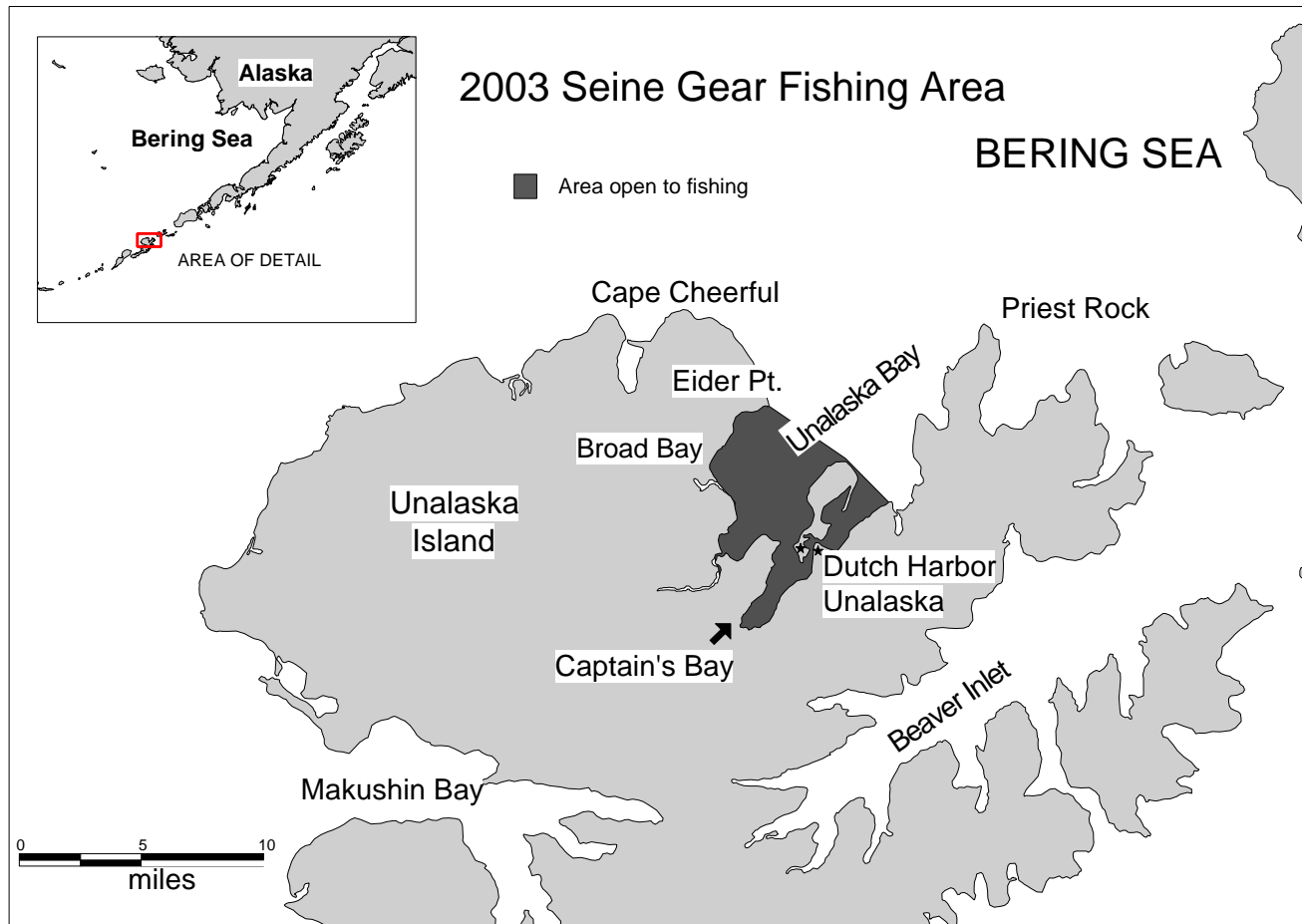


Figure 4. Map of Unalaska Island from Beaver Inlet to Makushin Bay, with the 2003 seine fishery open area defined.

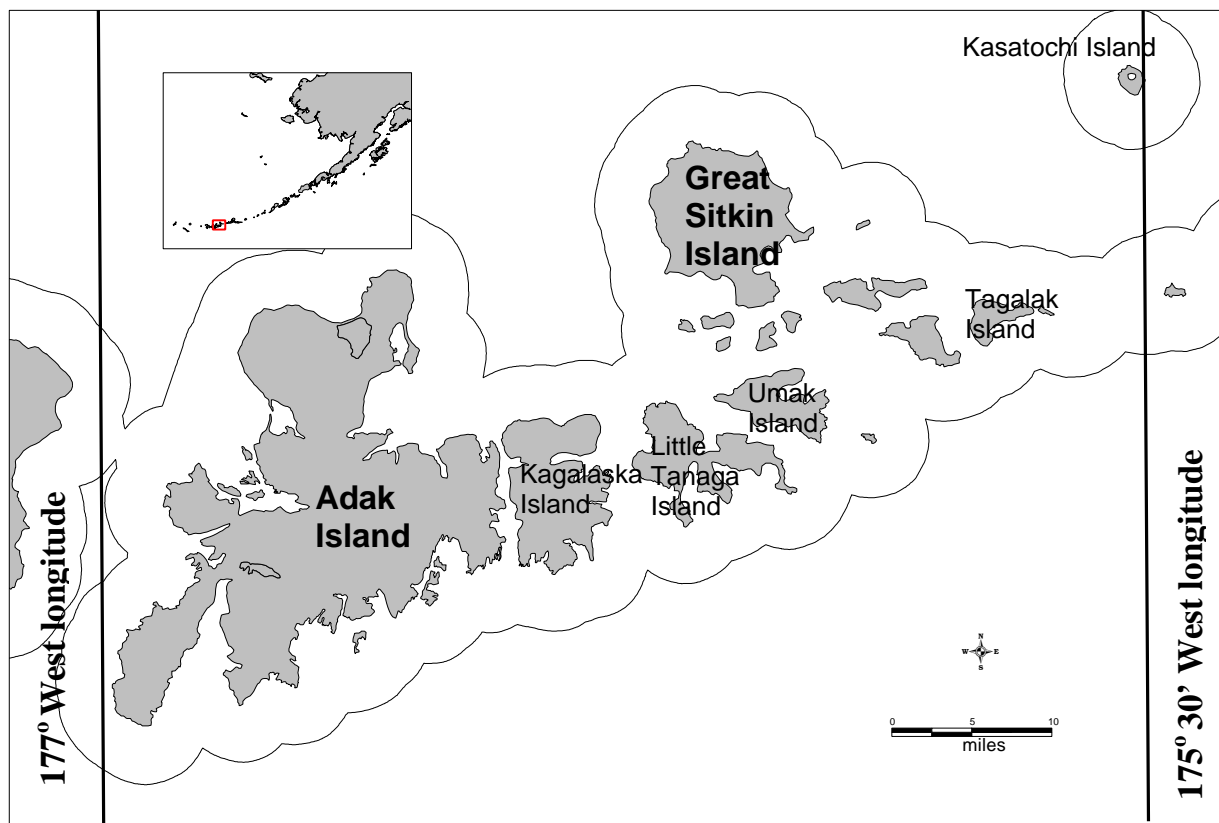


Figure 5. Map of Adak Island area with boundaries of exploratory fishery defined.

## **APPENDIX**

**5 AAC 27.662 BUYER AND TENDER REPORTING REQUIREMENTS.**

In addition to the requirements of 5 AAC 39.130(f) each tender operator and each buyer or his agents shall report in person to and register with a local representative of the department upon arrival in the statistical area before commencing operations and before changing location of the operation. Each buyer shall:

- (1) identify all vessels to be employed in transporting or processing herring and shall register such vessels with a local representative of the department located in the statistical area before transporting or processing of herring;
  - (2) make daily reports of all herring purchased from fishermen, and other processing records as specified by local representative of the department; and
  - (3) submit fish tickets before departure from the area and no later than 10 days after termination of buying operations in the area, or as otherwise specified by a local representative of the department.
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Appendix B. Forecasted harvest allocation for Togiak sac roe and Dutch Harbor food and bait herring fisheries, 2004.

This forecast is for the “Dutch Harbor”: Unimak, Akutan, and Unalaska Districts and that portion of the Umnak District located east of Samalga Pass, food and bait herring fishery (Frederick West, ADF&G, Anchorage, memo December 5, 2003).

***Harvest Allocation of the 2004 Forecasted Pacific  
Herring Run Biomass, Togiak District, Bristol Bay***

Biomass (Short Tons)	Harvest (Short Tons)
2004 Forecasted Biomass	143,124
Exploitation @ maximum 20% For Total Allowable Harvest	28,625
Togiak Spawn-on-Kelp Fishery (Fixed Allocation)	1,500
Remaining Allowable Harvest	27,125
<b>Dutch Harbor Food/Bait Allocation<sup>a</sup></b>	
<b>Purse Seine Allocation<sup>b</sup></b>	1,533
<b>Pound Fishery Allocation</b>	100
<b>Gillnet Allocation<sup>c</sup></b>	266
Remaining Allowable Harvest for Togiak District Sac Roe Fishery	25,226
Purse Seine Allocation 70.0%	17,658
Gillnet Allocation 30.0%	7,568

<sup>a</sup> The Dutch Harbor Food/Bait allocation is 7% of the remaining allowable harvest.

<sup>b</sup> The purse seine allocation for 2004 is 86% of the Dutch Harbor allocation minus the pound fishery allocation of 100 tons.

<sup>c</sup> The gillnet allocation for 2004 is 14% of the Dutch Harbor allocation.

- Continued -

### **2004 Togiak Herring Forecast Summary**

Age-structured analysis (ASA) has been used since 1993 to forecast the Togiak herring population. This methodology estimates population abundance using age composition data in conjunction with biomass estimates selected from the best aerial survey years.

The forecasted herring biomass for the Togiak District in 2004 is 143,124 tons. Returns from the 1996, and 1997 year classes (ages-8, and-7, respectively) are expected to dominate with 60% of the biomass and 59% of the abundance in numbers of fish. Age-11 herring from year class 1993 are expected to follow in magnitude with 9% of the biomass and 6% of the abundance. A Ricker stock-recruitment model with an environmental variable of Southeast Bering Sea surface temperature was used to forecast the 2004 age-4 abundance. The forecasted return of age-4 and -5 herring are uncertain because of the limited sample size of age-4 fish, and because new recruits are not confirmed until they return as age-5 herring. The forecasted average weight of the harvest biomass is 325 g. Simple linear regression models were used to forecast the weight of each age class based on their weights the previous year.

In 2003, inclement weather conditions and poor visibility throughout the herring fishery prevented an accurate aerial assessment of the total run biomass. No aerial surveys were conducted between May 2 and May 12. Therefore, inseason management was based on the preseason forecast of 126,213 tons. Herring were first reported in the district on April 19, when 108 tons were documented at the northeast tip of the Hagemeister Island. Poor visibility and weather conditions continued but observations of herring increased with the first substantial biomass documented during two surveys on April 25 with 29,805 tons observed in the Nunavachak, Togiak, Hagemeister and Cape Newenham Sections. This allowed for the earliest start to the fishery since 1980. The peak biomass estimate of 36,487 tons, observed on April 29, was primarily documented in the Togiak and Hagemeister Sections. The last survey conducted on May 30 observed an estimated 6,798 tons of herring still on the grounds.

Samples from non-selective gear (commercial purse seine and test purse seine) were used to assess the age composition of the run biomass. Commercial purse seine catch and test fish samples ranged from age-4 to age-17. Age-7 and age-6 herring were the most prevalent and represented 52% of the harvest biomass and 62% of the abundance. Age-10 herring followed with 12% of the biomass and 9% of the abundance.

We normally see a temporal change in age composition from older to younger herring at some point in the fishery but age-6, -7, and -10 herring predominated and mean weight remained high. This may signify that the new recruit classes of herring are weak or that these age classes did not arrive during the commercial fishery. Poor visibility prevented accurate surveys during the latter portion of the harvest but post-season surveys assessed moderate biomass in late May signifying some strength in the young age classes. Future returns will determine the strength of these new recruits (age-4 and -5 herring).

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The 2003 mean weights at age for age-4 through age-8 herring were the heaviest on record and age-9+ herring were the heaviest since 1992. Two factors may have contributed to this phenomenon: 1) warmer than average temperatures last winter and 2) the dramatic increase in fishing time per opening in 2003. The 2002-2003 winter was one of the warmest on record. An extended growing season and additional food could produce higher than average growth rates and gonad indexes prior to arriving on the spawning grounds. With the implementation of the coop fishery in 2001, duration of commercial openings has continued to increase every year with 2003 having the longest openings on record. This allows for a more "selective" nature of the harvest. Fishermen have more time and area to find better quality herring potentially increasing the average weight at age of the commercial harvest.

Biomass of the Togiak herring spawning population has been monitored since the late 1970's, concurrent with the development of the sac-roë fishery. Peak abundance was observed during the 1982 and 1983 seasons with recruitment of the large age-5 and age-6 year classes from brood years 1977 and 1978 into the spawning biomass. The 1977 and 1978 year classes dwarfed the magnitude of subsequent year classes. The last modest recruitment events were evident in the 1987 and 1988 year classes. Current data suggests that we are seeing moderately strong recruitment from the 1996 and 1997 year classes and that the Togiak herring population is stable.

Frederick West  
Bristol Bay Research Biologist  
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